

Title (en)
LOW MOLECULAR WEIGHT CHONDROITIN SULFATE, COMPOSITION CONTAINING SAME, AND PREPARATION METHOD THEREFOR AND USE THEREOF

Title (de)
CHONDROITINSULFAT MIT NIEDRIGEM MOLEKULARGEWICHT, DIESE ENTHALTENDE ZUSAMMENSETZUNG, VERFAHREN ZU IHRER HERSTELLUNG UND IHRE VERWENDUNG

Title (fr)
SULFATE DE CHONDROÏTINE DE FAIBLE POIDS MOLÉCULAIRE, COMPOSITION LE CONTENANT, SON PROCÉDÉ DE PRÉPARATION ET SON UTILISATION

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Application
EP 20882136 A 20201102

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• CN 2019115120 W 20191101
• CN 2020079335 W 20200313
• CN 202011070381 A 20200930
• CN 2020126003 W 20201102

Abstract (en)
[origin: US2021340283A1] The invention relates to a low molecular weight sulfate chondroitin and a preparation method thereof. A low molecular weight chondroitin sulfate with the average molecular weight of less than 1000 Dalton can be obtained by a production process of chondroitin sulfate lyase degradation, deproteinization, filtration and sterilization and drying using macromolecular sulfate chondroitin as a raw material. The low molecular weight Chondroitin sulfate has a narrow molecular weight distribution range, the ratio of chondroitin sulfate disaccharide is 43~60% and the ratio of chondroitin sulfate tetrasaccharide is 30~45%, the sum of chondroitin sulfate disaccharide and chondroitin sulfate tetrasaccharide is more than 87%, the total oligosaccharide content of low molecular weight chondroitin sulfate is more than 97% and the protein content is less than 0.5%; Compared with the general market macromolecule chondroitin sulfate, the product has more remarkable repair effect at the concentration of 50~100 µg/mL on chondrocytes damaged by 1 mM hydrogen peroxide, with strong repair ability and repair rate of 14%~23%. The low molecular weight chondroitin sulfate can be used to treat joint injury and is an important raw material for medical products, health care products, cosmetics and food.

IPC 8 full level
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Citation (search report)
• [IY] JP 5341411 B2 20131113
• [XYI] WO 2013174847 A1 20131128 - GNOSIS SPA [IT]
• [Y] CN 1262277 C 20060705 - TANG YI [CN]
• [XI] HAMAI AKIO ET AL: "Two distinct chondroitin sulfate ABC lyases: An endoeliminase yielding tetrasaccharides and an exoeliminase preferentially acting on oligosaccharides", JOURNAL OF BIOLOGICAL CHEMISTRY, AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY, US, vol. 272, no. 14, 4 April 1997 (1997-04-04), pages 9123 - 9130, XP002468009, ISSN: 0021-9258, DOI: 10.1074/JBC.272.14.9123
• [IY] LI LIAN ET AL: "Preparation of Low Molecular Weight Chondroitin Sulfates, Screening of a High Anti-Complement Capacity of Low Molecular Weight Chondroitin Sulfate and Its Biological Activity Studies in Attenuating Osteoarthritis", INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES, vol. 17, no. 10, 11 October 2016 (2016-10-11), pages 1685, XP093097992, DOI: 10.3390/ijms17101685
• See also references of WO 2021083384A1

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